

## **II. Epidemiology Profile of HIV/AIDS in King County**

**NOTE:** The following section has been excerpted from an article that appeared in the **HIV/AIDS Epidemiology Report – 1<sup>st</sup> Half '05** (published jointly by Public Health – Seattle & King County and the Washington State Department of Health). This update is compiled from surveillance data on persons with AIDS (collected since 1981) and HIV infection collected since 1999. For more in-depth information about the epidemiology of HIV/AIDS in King County and Washington State, please refer to these and other publications produced by the aforementioned programs. Information can also be obtained by Public Health's website at [www.metrokc.gov/health/apu](http://www.metrokc.gov/health/apu).

### **A. King County AIDS Rates Compared with State and National Data**

There are an estimated 1.045 million HIV infected persons in the United States, including one-quarter who remain undiagnosed and unaware of their status<sup>2</sup>. About 40,000 new infections occur each year (less than 1% of the world total), with over 18,000 deaths reported 2003<sup>3</sup>.

In 2003, the Seattle metropolitan statistical area (MSA) ranked 23rd in the cumulative number and 37th in annual rate of reported AIDS cases nationally. This was among 106 metropolitan areas with a population of 500,000 or more. The Seattle MSA (which includes King, Snohomish and Island counties) AIDS rate during 2003 was 15.3 cases per 100,000 population. In comparison, the Tacoma MSA had a rate of 4.6, and the Portland (Oregon) MSA rate was 8.9 per 100,000. The highest rates in the country were in New York City (59.2), Miami FL (45.8), San Francisco CA (45.2), Fort Lauderdale FL (39.9), and Baltimore MD (39.3).<sup>3</sup>

The Seattle MSA cases make up a decreasing proportion of total U.S. cases over time. The Seattle MSA accounted for 1.01% of the cumulative U.S. total at the end of 1992, 0.95% at the end of 1996, and 0.85% at the end of 2003.<sup>3</sup>

King County has the highest AIDS case rate among all Washington counties. About one-third of the Washington population resides in King County, but almost two-thirds of all AIDS cases resided in King County at the time of AIDS diagnosis. Within King County the rate is highest in Seattle. Seattle has about one-third of the County population, and two-thirds of the County's reported AIDS cases.

### **B. Number of Persons Infected with HIV in King County**

As of December 2001, the Washington State Department of Health estimated that as many as 13,000 Washington residents were infected with HIV, including persons with AIDS<sup>4</sup>. Since 64.8% of reported HIV and AIDS cases reside in King County, we estimate that there are up to 8,400 King County residents are currently living with HIV infection or AIDS.

The estimated number of new HIV diagnoses has been level with 350-400 new diagnoses each year since 1998. Since there are only about 100 deaths annually, the number of King County residents reported living with HIV/AIDS is increasing, as shown in Figure 1.

The 8,400 HIV-infected King County residents include about 3,200 living with AIDS and 5,200 with HIV but not AIDS. These include 5,808 cases reported to Public Health through 6/30/2005, an estimated 800 HIV/AIDS diagnoses not yet reported, and an estimated 1,800 persons who are unaware of their infection status.

### **C. Characteristics of Persons Living with HIV or AIDS (Table 1)**

Ninety percent of persons living with HIV or AIDS in King County are male and 10% are female. Most, 71%, are White, 16% are Black, 9% Hispanic, 2% Asian or Pacific Islander (API), and 2% Native American or Alaskan Native (NA/AN). Eighty-four percent were born in the U.S. or territories, and 11% were foreign-born; the birthplace was unknown for 5%.

Seven percent of cases have no identified behavioral exposure to HIV (using the standard CDC-defined categories). Among cases with known exposure, 75% are men who have sex with men (MSM), 9% are MSM who also inject drugs (MSM-IDU), 7% are injection drug users (IDU), 8% report having a heterosexual partner with HIV or at risk of HIV infection, and fewer than 1% each were born to HIV-infected mothers or received blood products (mostly prior to 1985 in the US).

The distribution of exposure categories differs by race and gender. MSM exposure accounts for 85% of known exposures among White men, 61% among Black men, 80% among Hispanic men, 86% among API men, and 53% among NA/AN men. MSM-IDU is the second most common exposure among White men (11%), Hispanic men (8%), and NA/AN men (31%). Heterosexual transmission is the second most common exposure among Black men (17%) and API men (5%).

Among women, having a heterosexual partner with HIV or at risk for HIV is the most common exposure, including Whites (60%), Blacks (67%), Hispanics (77%), and API (78%). Among NA/AN women with HIV, IDU is the most common risk behavior (67%), and 33% had heterosexual partners with HIV or at risk.

The estimated rates of persons living with HIV infection vary widely between different population groups. The rate among males (0.9%) is about ten times higher than among females (0.1%). Compared with Whites (0.5%), the rates are more than two times higher among Blacks (1.3%) and one and one half times higher among NA/AN and Hispanics (each 0.8%) but much lower among API (0.1%). Overall rates are highest among Black and Hispanic males, and lowest among API, White, and Hispanic females.

Infection rates are much higher among foreign-born Blacks (3.4%) than native-born Blacks (1.0%). This is a significant population for special prevention interventions because the risk profiles, language, cultural, and educational needs are so diverse and different. The majority of cases among foreign-born Blacks are due to heterosexual transmission (48%) or have no identified risk (43%), while 57% of native-born Blacks are MSM or MSM-IDU, and 17% are IDU (data not shown).

Based upon the age at initial diagnosis of HIV infection, the largest numbers of King County residents reported with HIV were age 25-29 (20%), age 30-34 (23%), or age 35-39 (21%). Only 2% of persons were under age 20. This age distribution has remained largely unchanged throughout the epidemic.

The age distribution is different among males and females (data not shown). Females tend to be younger than males when first diagnosed with HIV. This is probably because most women are heterosexually infected and tend to be younger than their male partners.

#### **D. Trends in Diagnosis of HIV Infection (Table 2)**

We analyzed trends based upon the year of initial diagnosis with HIV infection. Some individuals are diagnosed with HIV soon after infection, while others are not diagnosed until symptoms of AIDS develop. Based upon data reported through June 2005, we compared the characteristics of persons first diagnosed with HIV infection during 1996-1998, 1999-2001, and 2002-2004. A chi-square test for trend was used to determine if the change in proportions for each group was statistically significant over those three periods. The trends highlighted in Table 2 may demonstrate shifts in the epidemic, artifacts from implementing surveillance for HIV infection in 1999, or longer delays in getting tested among some groups.

Although the relative ranking of each group has not changed over time, there have been substantial shifts in the proportion of persons newly diagnosed with HIV infection among different groups. Between the three-year periods 1996-98 and 2002-04, the proportion of cases increased for heterosexual transmission (from 6% to 12%), Black males (from 11% to 16%), Black females, (from 3% to 6%), and all Blacks (from 15% to 22%). The proportion of cases decreased among White males (from 65% to 56%), and all Whites (from 70% to 59%). Foreign-born cases increased from 12% to 19% of the total. Specifically, foreign-born Blacks increased from 4% to 9% of the total, and native-born Blacks increased from 10% to 13%.

#### **Diagnoses of AIDS and Deaths (Figure 2)**

Between 1982 and June 30, 2005, a total of 7,160 residents have been diagnosed with AIDS and 3,937 (55%) have died. There were about 250 new AIDS diagnoses annually between 1998 and 2004. The number of AIDS deaths fluctuated between 70 and 120 annually from 1998 through 2004.

The dramatically lower death numbers and delays in progression to AIDS beginning about 1995 are primarily due to wide-spread introduction of effective antiretroviral treatments. In addition, effective prophylaxis to prevent opportunistic infections (such as *Pneumocystis jiroveci* pneumonia [PCP]), better monitoring of HIV progression (such as by assays of HIV viral load), and prevention efforts in reducing HIV transmission rates have contributed to decreased numbers of HIV and AIDS diagnoses.

Given the availability of effective antiretroviral therapy (or HAART) ongoing progressions to AIDS and deaths due to HIV are worrisome. Factors that contribute toward these progressions and deaths include that some people learn their HIV status too late in the course of their HIV

disease to prevent AIDS; some have problems accessing treatment, and some may refuse treatment. Others may experience treatment failures due to problems with taking medications, adverse side effects, or development of HIV strains resistant to patient drug regimens.

Additional prevention efforts aimed at interrupting progression of HIV's effects are warranted. Such efforts might include increased HIV testing to promote earlier diagnosis and reduce simultaneous diagnosis with HIV and AIDS. Another strategy could be to promote simplified HAART regimens (e.g. from three times a day to once a day dosages) to improve adherence to HAART regimens.

HIV/AIDS was the leading cause of death among 25-44 year old males in King County during the years 1989 to 1996,<sup>5</sup> but dropped to the 6<sup>th</sup> leading cause of death by 2002.

## **E. Conclusions**

There are an estimated 8,400 HIV-infected King County residents. These include 3,200 persons with AIDS and 5,200 persons who have not developed AIDS. Over 4,000 additional persons have died since 1982. The numbers of deaths and AIDS diagnoses were roughly level from 1998 to 2003.

About 350-400 new HIV infections have been estimated to occur each year since 1998. However, it is important to note that about one-quarter of persons are diagnosed simultaneously with HIV and AIDS, indicating they were not tested for HIV until late in the course of disease.

The total number of persons living with AIDS or with HIV infection in King County is increasing because each year there are more new diagnoses than deaths. Most HIV-infected King County residents are White men who have sex with men, are 30-45 years of age, and reside in Seattle.

Based upon the date of initial diagnosis with HIV infection and from 1996 through 2004, an increasing proportion of cases are among Blacks, and the proportion of cases due to heterosexual transmission is increasing. HIV infection among foreign-born persons accounts for all of the increase in cases among Blacks, and much of the increase among heterosexual-transmission cases.

Contributed by Amy Bauer MPH, and Jim Kent MS

1. World Health Organization. AIDS Epidemic Update: December 2004. Available at [www.unaids.org](http://www.unaids.org)
2. Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003 [Abstract T1-B1101]. Presented at the National HIV Prevention Conference, Atlanta, GA; June 2005.
3. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 2003 (Vol. 15), Atlanta: US Department of Health and Human Services, CDC; 2004. Available at <http://www.cdc.gov/hiv/stats/hasrlink.htm>.
4. WA Department of Health. HIV Prevalence Estimation in Washington (working document)

**Table 1. Reported and estimated King County residents living with HIV or AIDS**

Characteristics of King County Residents with HIV or AIDS 6/30/2005	Actual Reports		Estimated HIV Prevalence		
	Number Reported	Percent	Estimated Infected*	2000** Population	Estimated Rate per 100***
<b>TOTAL</b>	5,808	100%	8,400	1,737,034	0.5%
<b>RACE/ETHNICITY</b>					
White, not Hispanic	4,113	71%	5,950	1,309,120	0.5%
Black, not Hispanic	918	16%	1,330	105,205	1.3%
<i>Foreign-born Blacks</i>	258	4%	370	10,794	3.4%
<i>Native-born Blacks</i>	638	11%	920	94,411	1.0%
Hispanic	510	9%	740	95,242	0.8%
Asian & Pacific Islander	137	2%	200	210,156	0.1%
Native American or Alaskan Native	88	2%	130	17,311	0.8%
Multiple Race	25	<1	N.A.	Not applicable	Not applicable
Unknown	17	<1	N.A.	Not applicable	Not applicable
<b>SEX &amp; RACE/ETHNICITY</b>					
<b>Male</b>	5,256	90%	7,600	864,457	0.9%
White Male	3,896	67%	5,630	649,271	0.9%
Black Male	671	12%	970	53,895	1.8%
Hispanic Male	466	8%	670	51,662	1.3%
Asian or Pacific Islander Male	123	2%	180	101,045	0.2%
Native American or Alaskan Native Male	62	1%	90	8,584	1.0%
Multiple or Unknown Race	38	<1	N.A.	Not applicable	Not applicable
<b>Female</b>	552	10%	800	872,577	0.1%
White Female	217	4%	310	659,849	0.0%
Black Female	247	4%	360	51,310	0.7%
Hispanic Female	44	1%	60	43,580	0.1%
Asian or Pacific Islander Female	14	<1	<20	109,111	<0.1%
Native American or Alaskan Native Female	26	<1	<20	8,727	<0.2%
Multiple or Unknown Race	4	<1	N.A.	Not applicable	Not applicable
<b>HIV EXPOSURE CATEGORY</b>					
Men who have sex w/men (MSM)	4,069	70%	6,300	40,000	15.8%
Injection drug user (IDU)	369	6%	570	15,000	3.8%
MSM-IDU	504	9%	780	3,150	24.8%
Blood product exposure	38	1%	60	Unknown	Unknown
Heterosexual contact	426	7%	660	1,245,000	0.1%
Perinatal exposure	20	<1	30	Unknown	Unknown
SUBTOTAL- known exposure	5,426	93%	8,400	1,737,034	0.5%
<i>Undetermined/ other</i>	382	7%	N.A.	Not applicable	Not applicable
<b>AGE AT HIV DIAGNOSIS</b>					
0-14 years	24	0%	30	326,475	0.0%
15-19 years	115	2%	170	108,261	0.2%
20-24 years	580	10%	840	116,597	0.7%
25-29 years	1,143	20%	1,650	141,795	1.2%
30-39 years	2,554	44%	3,690	308,187	1.2%
40-49 years	1,109	19%	1,600	292,470	0.5%
50 years and over	283	5%	410	443,249	0.1%
<b>PLACE OF BIRTH</b>					

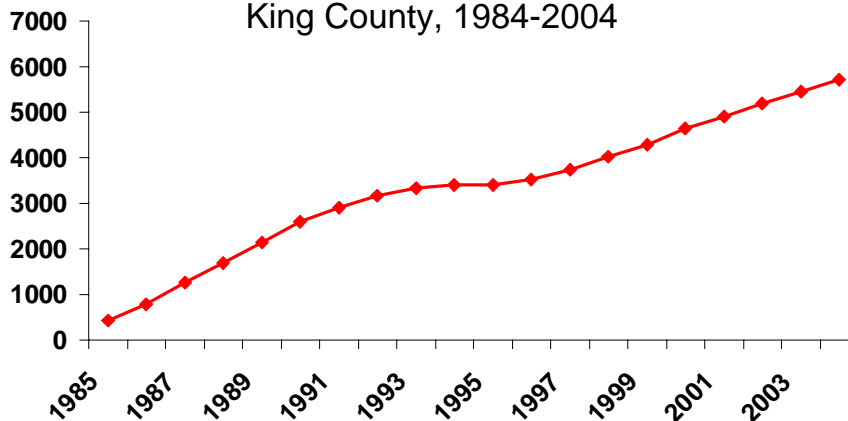
Native-born	4,880	84%	7,390	1,468,749	0.5%
Foreign-born	666	11%	1,010	268,285	0.4%
Unknown birthplace	262	5%	N.A	Not applicable	Not applicable

\* The estimated number of King Co. residents for each category is the proportion of total cases, multiplied by the estimated total of 8,400.

\*\* 2000 Census Population as of April 1, 2000, with single race bridged estimates. Newer Census estimates are not available for bridged race groupings, or by place of birth.

### Figure 1: Persons Reported Living with HIV Infection or AIDS

King County, 1984-2004

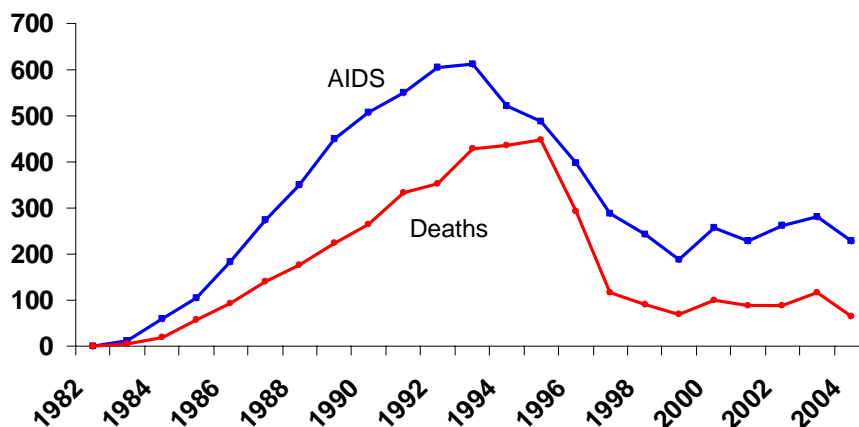


\*\*\* The estimated rate per 100 is the estimated number infected, divided by the population. These are expressed as percent.

### Figure 2: New AIDS Cases and Deaths

King County, 1982-2003

Date reported through June 30, 2005



**Table 2. Seattle-King County residents diagnosed with HIV 1995-2003. Selected trends over time among 3,349 cases diagnosed 1996-2004 and reported through 06/30/2005**

	1996-1998		1999-2001		2002-2004		Trend 1996- 2004
	No	%	No	%	No	%	
<b>TOTAL</b>	<b>1,124</b>	<b>100%</b>	<b>1,148</b>	<b>100%</b>	<b>1,077</b>	<b>100%</b>	
<b>HIV Exposure Category</b>							
Men who have sex with men (MSM)	766	76%	757	71%	704	73%	
Injection drug user (IDU)	80	8%	79	7%	72	7%	
MSM-IDU	94	9%	81	8%	74	8%	
Heterosexual contact	65	6%	131	12%	113	12%	Up
Subtotal with known exposure	1014		1060		966		
<b>Sex &amp; Race/Ethnicity</b>							
<b>Male</b>	1015	90%	1013	88%	956	89%	
White Male	735	65%	696	61%	606	56%	Down
Black Male	124	11%	158	14%	174	16%	Up
Hispanic Male	107	10%	106	9%	110	10%	
<b>Female</b>	109	10%	135	12%	121	11%	
White Female	51	5%	44	4%	34	3%	
Black Female	39	3%	71	6%	65	6%	up
Hispanic Female	5	0%	14	1%	8	1%	
<b>Race/Ethnicity</b>							
White, non Hispanic	786	70%	740	64%	640	59%	down
Black, non Hispanic	163	15%	229	20%	239	22%	up
Hispanic	112	10%	120	10%	118	11%	
Asian or Pacific Islander	34	3%	35	3%	37	3%	
American Indian/ Alaska Native	24	2%	13	1%	22	2%	
<b>Age at diagnosis of HIV</b>							
0-19 years	20	2%	21	2%	10	1%	
20-29	255	23%	263	23%	231	21%	
30-39	525	47%	524	46%	463	43%	
40-49	244	22%	265	23%	281	26%	up
50-59	65	6%	66	6%	76	7%	
60 +	15	1%	9	1%	16	1%	
<b>Residence</b>							
Seattle	987	88%	980	85.4%	849	79%	down
King Co. outside Seattle	199	18%	180	15.7%	215	20%	up
<b>Place of birth, sex, race, and exposure</b>							
Foreign-born	134	12%	195	17.0%	203	19%	up
<i>Heterosexual Foreign-born</i>	21	2%	77	6.7%	49	5%	up
<i>Foreign-born Blacks</i>	42	4%	86	7.5%	98	9%	up
Native-born	910	81%	892	77.7%	854	79%	
<i>Heterosexual Native-born</i>	39	3%	53	4.6%	63	6%	up
<i>Native-born Blacks</i>	115	10%	134	11.7%	140	13%	up